

## Assignment\_week11

### Task 1

Proof by induction for the factorial function.

Inductive start:

It's given that  $f(1) = 1$ .

Inductive step:

If  $f(n-1)$  is correct then  $n \cdot f(n-1)$  must be correct, since:  $n! = n \cdot (n-1)!$ .

If we now use recursion, we will eventually hit  $n \cdot f(1)$ , we know  $f(1)$  is correct, thus it will be correct for every step before.